Airborne Satellite Communication Solutions

Beyond-line-of-sight tactical SATCOM systems

Elbit Systems™
C4I and Cyber

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Elbit Systems offers comprehensive secure and immune satellite communication (SATCOM) systems for a wide range of tactical networks, platforms, and applications. Designed and tailored to modern battlefield requirements, the solutions deliver reliable and continuous connectivity while maneuvering in challenging environments on land, sea, or air. The field-proven SATCOM systems are in operational use by armies and governments around the world.

Airborne wideband SATCOM on-the-move (SOTM)

The ELSAT family of airborne satellite communications (SATCOM) solutions for voice, data and video transmission bring advanced capabilities and beyond-line-of-sight (BLOS) long-range connectivity to UAS, helicopters, mission aircraft and fighter jets, enabling reliable and secure high data rate broadband communication. The systems are available in a range of sizes and can support numerous users simultaneously.

Comprehensive operational connectivity: Featuring fast, enhanced acquisition and dynamic tracking performance, and an advanced modem, the SOTM terminals can work in challenging environmental conditions and maintain uninterrupted connectivity through the rotor blades while using military and commercial satellites in Ka and Ku bands.

High-performance BLOS communication systems for long-distance missions

ELSAT airborne solutions provide resilient and uninterrupted broadband connectivity between UAS, helicopters, and aircraft to maneuvering forces and HQ, enabling tactical information sharing. The narrowband and wideband (up to 100Mbps) solutions support bidirectional real time

communication for critical intelligence, surveillance, and reconnaissance (ISR), high-definition video, command and control, flight data monitoring, audio, and text.

The airborne SATCOM systems automatically acquire and maintain communication links with military and commercial satellites using advanced antenna terminals supported by built-in IMU, tracking receiver, BUC, and modem (optional).

Mounted on a wide range of manned and unmanned airborne platforms, the ruggedized systems enable decision makers, commanders, and field units to maximize C^4I effectiveness and situational awareness in real time and under demanding combat conditions.

Key Features

- Networking the battlefield by sharing between military branches
- BLOS reliable and secure narrowband and wideband (up to 100Mbps) connectivity with UAS, helicopters, and aircraft
- Bidirectional real time communication for ISR, high-definition video, command and control, flight data monitoring, audio, and text
- Uninterrupted broadband connectivity through rotor blades
- Ka/Ku-band based on dish antennas and phased-array terminals in various sizes (20 to 75 cm) and configurations
- NMS application for maintenance and support
- Compliant with FCC and ITU regulations

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Technical Specifications

Antenna size	30cm		60cm		75cm	
Specification	**Ku Band**	**Ka Band**	**Ku Band**	**Ka Band**	**Ku Band**	**Ka Band**
Frequency Tx	13.75 to 14.5 GHz	29.0 to 31.0 GHz	13.75 to 14.5 GHz	28-30 or 29-31GHz	13.75 to 14.5 GHz	28-30 or 29-31GHz
Frequency Rx	10.75 to 12.75 GHz	19.2 to 21.2 GHz	10.75 to 12.75 GHz	18-20.2 or 19.2-21GHz	10.75 to 12.75 GHz	18-20.2 or 19.2-21GHz
G/T (Typical, at 30° elevation, w/o radome)	8.3 dB/K	11.5 dB/K	14.1 dB/K	16.1 dB/K	15.1 dB/K	18.1 dB/K
EIRP (Typical, w/o radome)	47.5 dBW for 60W BUC	50.5 dBW for 40W BUC	53.5 dBW for 60W BUC	56.5 dBW for 40W BUC	55.0 dBW for 60W BUC	58.5 dBW for 40W BUC
SSPA Input Power	Up to 100W	Up to 50W	Up to 100W	Up to 50W	Up to 100W	Up to 50W
Azimuth range	360° continuous rotation	360° continuous rotation	360° continuous rotation	360° continuous rotation	360° continuous rotation	360° continuous rotation
Elevation range	0° to 110°	0° to 110°	-2° to 110°	-2° to 110°	-2° to 110°	-2° to 110°
Roll range	±18°	±18°	±18°	±18°	±18°	±18°
Polarization range	270° continuous tracking	RHCP/LHCP electronic switching	270° continuous tracking	RHCP/LHCP electronic switching	270° continuous tracking	RHCP/LHCP electronic switching
Initial acquisition	< 25 sec	< 25 sec	< 25 sec	< 25 sec	< 25 sec	< 25 sec
Terminal weight (w/o radome and BUC)	14 kg	12 kg	24 kg	22 kg	26 kg	24 kg
IDU weight (BUC, modem, mini-ACU)	9 kg	9 kg	3.5 kg	3.5 kg	8 kg	8 kg
Power input (RTCA/DO-160G)	28 VDC	28 VDC	28 VDC	28 VDC	28 VDC	28 VDC
Power consumption (ODU w/o IDU)	Average 45W Peak 100W	Average 45W Peak 100W	Average 55W Peak 100W	Average 55W Peak 100W	Average 55W Peak 100W	Average 55W Peak 100W
Temperature (°C)	Operating: -40 to +71 Storage: -55 to +75	Operating: -40 to +71 Storage: -55 to +75	Operating: -45 to +71 Storage: -55 to +75	Operating: -45 to +71 Storage: -55 to +75	Operating: -45 to +71 Storage: -55 to +75	Operating: -45 to +71 Storage: -55 to +75
Environmental conditions (certified)	RTCA/DO-160G	RTCA/DO-160G	RTCA/DO-160G	RTCA/DO-160G	RTCA/DO-160G	RTCA/DO-160G

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